

L7 ANSWER 1 OF 9 MEDLINE
AN 1999144109 MEDLINE
DN 99144109
TI Targeted delivery of **multivalent phage display**
vectors into mammalian cells [published erratum appears in Biochim
Biophys
Acta 1999 Sep 21;1451(2-3):364].
AU Ivanenkov V V; Felici F; Menon A G
CS Department of Molecular Genetics, Biochemistry and Microbiology,
University of Cincinnati, College of Medicine 45267, USA.
SO BIOCHIMICA ET BIOPHYSICA ACTA, (1999 Jan 11) 1448 (3) 463-72.
Journal code: AOW. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Cancer Journals; Priority Journals
EM 199905
AB Novel peptide motives targeting endocytosing receptors were isolated from
phage display libraries of random peptides by
recovering internalized phage from mammalian cells. The
peptide-presenting
phage selected by internalization in HEp-2 and ECV304 human cells were
taken up 1000- to 100,000-fold more efficiently than their parent
libraries, and from 10 to 100 times faster than phage particles
displaying integrin-binding peptides. A high degree of selectivity of
phage uptake was observed in these cells: phage selected in ECV304 cells
were internalized approximately 100-fold more efficiently in ECV304 cells
than in HEp-2 cells. Likewise, phage selected in HEp-2 cells were
subsequently taken up approximately 40-fold more efficiently by HEp-2
cells than by ECV304 cells. In multiple independent trials using a cyclic
peptide **library**, an identical peptide sequence displayed on
phage was internalized by and recovered from ECV304 cells. These findings
indicate that the internalization process is highly selective, and is
capable of capturing a specific peptide from 2 x 10⁽⁷⁾ peptide variants.
Immunofluorescence microscopy showed juxtanuclear localization of
internalized phage. These results demonstrate the feasibility of using
multivalent phage-display libraries
to identify new targeting ligands for the intracellular delivery of
macromolecules.
CT Check Tags: Human; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
Amino Acid Sequence
Biological Transport, Active
Capsid: GE, genetics
Cell Line
*Coliphages: GE, genetics
Endocytosis
Escherichia coli: VI, virology
*Genetic Vectors: AD, administration & dosage
*Genetic Vectors: PK, pharmacokinetics
Microscopy, Fluorescence
Molecular Sequence Data
Peptide Library
Recombinant Proteins: GE, genetics
Viral Proteins: GE, genetics
CN 0 (pVIII protein); 0 (Capsid); 0 (Genetic Vectors); 0 (Peptide
Library); 0 (Recombinant Proteins); 0 (Viral Proteins)
L7 ANSWER 2 OF 9 SCISEARCH COPYRIGHT 2000 ISI (R)

AN 1999:739189 SCISEARCH
GA The Genuine Article (R) Number: 239FZ
TI Targeted delivery of **multivalent phage display**
vectors into mammalian cells (vol 1448, pg 463, 1999)
AU Ivanenkov V V; Felici F; Menon A G (Reprint)
CS UNIV CINCINNATI, COLL MED, DEPT MOL GENET BIOCHEM & MICROBIOL,
CINCINNATI,
OH 45267 (Reprint); UNIV CINCINNATI, COLL MED, DEPT MOL GENET BIOCHEM &
MICROBIOL, CINCINNATI, OH 45267; IRCCS, CTR RIC FARMACOL, KENTON LABS,
I-00179 ROME, ITALY
CYA USA; ITALY
SO BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR CELL RESEARCH, (21 SEP 1999) Vol.
1451, No. 2-3, pp. 364-364.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM,
NETHERLANDS.
ISSN: 0167-4889.
DT Errata; Journal
FS LIFE
LA English
REC Reference Count: 1
CC BIOCHEMISTRY & MOLECULAR BIOLOGY; BIOPHYSICS
RE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)
IVANENKOV V V	1999	1448	463	BBA-MOL CELL RES

L7 ANSWER 3 OF 9 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.
AN 1999384907 EMBASE
TI Erratum: Targeted delivery of **multivalent phage**
display vectors into mammalian cells (Biochimica Biophysica Acta
Molecular Cell Research (1999) 1448 (463-472) PII: S0167488998001633).
AU Ivanenkov V.V.; Felici F.; Menon A.G.
CS A.G. Menon, Department of Molecular Genetics, University of Cincinnati,
College of Medicine, Cincinnati, OH 45267, United States.
anil.menon@uc.edu
SO Biochimica et Biophysica Acta - Molecular Cell Research, (1999) 1451/2-3
(364).
ISSN: 0167-4889 CODEN: BAMRDP
CY Netherlands
DT Journal; Errata
FS 029 Clinical Biochemistry
LA English
CT Medical Descriptors:
*error
erratum
priority journal

L7 ANSWER 4 OF 9 MEDLINE DUPLICATE 2
AN 1999002881 MEDLINE
DN 99002881
TI The maltose-binding protein as a scaffold for monovalent display of
peptides derived from phage **libraries** [published erratum appears
in Anal Biochem 1999 Jan 15;266(2):240].
AU Zwick M B; Bonnycastle L L; Noren K A; Venturini S; Leong E; Barbas C F
3rd; Noren C J; Scott J K
CS Biochemistry Program, Department of Biological Sciences, Institute of
Molecular Biology and Biochemistry, Simon Fraser University, 8888
University Drive, Burnaby, British Columbia, V5A 1S6, Canada.
NC AI 37470 (NIAID)
SO ANALYTICAL BIOCHEMISTRY, (1998 Nov 1) 264 (1) 87-97.
Journal code: 4NK. ISSN: 0003-2697.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
 OS GENBANK-AF031088; GENBANK-AF031813
 EM 199902
 AB Random peptide **libraries** are displayed on filamentous bacteriophage as fusions to either the minor coat protein, pIII, or the major coat protein, pVIII. We have devised a means of isolating the peptide displayed on a phage clone by transferring it to the N-terminus of the maltose-binding protein (MBP) of Escherichia coli encoded by malE. Transfer of a peptide sequence to monomeric MBP eliminates phage-encoded amino acids downstream of the insert peptide as well as avidity effects caused by **multivalent** display on **phage**. Peptide:MBP fusions are also easily affinity purified on amylose columns. The pMal-p2 vector was engineered to accept phage DNA encoding pIII- and pVIII-displayed peptides fused to their respective leader sequences. Both types of leader sequence were shown to target the peptide:MBP fusions to the periplasm of E. coli. A streamlined procedure for transferring peptides to MBP was applied to clones that had been isolated from a panel of pVIII-displayed peptide **libraries** by screening with an HIV-1-specific monoclonal antibody (Ab). By enzyme-linked immunosorbent assay, the Ab bound each of the peptide:MBP fusions and required the presence of a disulfide bridge within each peptide. Some of the peptide:MBP fusions were also analyzed using surface plasmon resonance. Thus, our study shows the value of malE fusion vectors in characterizing phage-displayed peptides. Copyright 1998 Academic Press.

CT Check Tags: Human; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
 Amino Acid Sequence
 Bacteriophages: GE, genetics
 Base Sequence
 *Carrier Proteins: GE, genetics
 Carrier Proteins: ME, metabolism
 Carrier Proteins: SE, secretion
 Cloning, Molecular
 DNA, Recombinant
 Escherichia coli
 Genetic Vectors
 HIV Antibodies: IM, immunology
 HIV-1: IM, immunology
 Molecular Sequence Data
 ***Peptide Library**
 Polymerase Chain Reaction
 Protein Processing, Post-Translational
 Recombinant Fusion Proteins: GE, genetics
 Signal Peptides: GE, genetics
 Signal Peptides: ME, metabolism

CN 0 (maltose-binding protein); 0 (Carrier Proteins); 0 (DNA, Recombinant);
 0 (Genetic Vectors); 0 (HIV Antibodies); 0 (Peptide **Library**); 0 (Recombinant Fusion Proteins); 0 (Signal Peptides)

L7 ANSWER 5 OF 9 MEDLINE DUPLICATE 3
 AN 1999053659 MEDLINE
 DN 99053659
 TI The role of valency in the selection of anti-carbohydrate single-chain
 Fvs from **phage display libraries**.
 AU MacKenzie R; To R
 CS Institute for Biological Sciences, National Research Council Canada, Ottawa, Ontario.. roger.mackenzie@nrc.ca
 SO JOURNAL OF IMMUNOLOGICAL METHODS, (1998 Nov 1) 220 (1-2) 39-49.
 Journal code: IFE. ISSN: 0022-1759.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals

EM 199902
EW 19990204

AB Several strategies were investigated for **phage display** of anti-carbohydrate single-chain Fvs (scFvs) using the anti-Salmonella Se155-4 scFv as a model system. All were based on the knowledge that panning V(H) CDR **libraries** displayed in a standard pIII phagemid/helper **phage** format against immobilized **multivalent** carbohydrate antigens selects almost solely for mutants with higher yields of soluble product or scFvs that form dimers

or

higher oligomers even when the linker length is chosen to give monomeric molecules. Construction of scFv **libraries**, in a phagemid vector, with mutations that already provide higher yields and/or short linkers to promote dimeric display greatly reduced these undesired selection pressures. However, the panning of an error-prone **library** of the entire scFv in a short linker format yielded two mutants that existed partially in higher oligomeric forms, indicating that dimeric display did not entirely eliminate the selection pressure problem. In one mutant a Ser75Gly mutation led to the formation of greater amounts of dimeric, trimeric and tetrameric scFv and surface plasmon resonance analysis of these different forms gave quantitative data for the functional affinity of these different scFv forms. Finally, a phage vector was constructed

and

the original V(H) CDR **library** was transferred to this vector. This display format, in which scFv is displayed on all three to five copies of pIII, seemed to be superior in terms of selection on the basis of binding site affinity and as a display mode for scFvs with low intrinsic affinity. While the use of the phage vector did not lead to the isolation of higher affinity binders from the **library** employed here, it did almost entirely remove the undesired selection pressures in that there was selection for the wild-type sequence. It is suggested that the multivalency of display provided by phage vectors is preferable to

any

phagemid vector strategy for the de novo isolation of anti-carbohydrate antibodies from phage **libraries**.

CT

Check Tags: Human
Amino Acid Sequence
Amino Acid Substitution
Antibodies, Bacterial: GE, genetics
Antibodies, Bacterial: IM, immunology
Antibodies, Bacterial: IP, isolation & purification
Antigen-Antibody Reactions
Bacteriophages
Base Sequence
Genetic Vectors
Immunoglobulin Fragments: GE, genetics
Immunoglobulin Fragments: IM, immunology
*Immunoglobulin Fragments: IP, isolation & purification
Immunoglobulin Variable Region: GE, genetics
Immunoglobulin Variable Region: IM, immunology
*Immunoglobulin Variable Region: IP, isolation & purification
Molecular Sequence Data
***Peptide Library**
Polyisoprenyl Phosphate Sugars: IM, immunology
Polymerase Chain Reaction
Recombinant Fusion Proteins: GE, genetics
Recombinant Fusion Proteins: IM, immunology
Recombinant Fusion Proteins: IP, isolation & purification
Salmonella typhimurium: IM, immunology
Subtraction Technique
Surface Plasmon Resonance

CN

0 (immunoglobulin Fv); 0 (Antibodies, Bacterial); 0 (Genetic Vectors); 0 (Immunoglobulin Fragments); 0 (Immunoglobulin Variable Region); 0 (O-specific polysaccharide, Salmonella); 0 (**Peptide Library**); 0 (Polyisoprenyl Phosphate Sugars); 0 (Recombinant Fusion Proteins)

L7 ANSWER 6 OF 9 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1998:302607 BIOSIS
 DN PREV199800302607
 TI Selection of new epitopes from monovalent displayed phage octapeptide
library.
 AU Li, Quanxi; Wang, Yan (1); Li, Jing; Wang, Yaming; Xu, Jianjun; Wang,
 Limin; Dong, Zhiwei
 CS (1) Cent. Lab., Navy Gen. Hosp., Beijing 100037 China
 SO Chinese Medical Sciences Journal, (March, 1998) Vol. 13, No. 1, pp. 1-8.
 ISSN: 1001-9294.
 DT Article
 LA English
 AB A **library** of 2 X 10⁷ random octapeptides was constructed by use
 of phagemid-based monovalent **phage display** system. The
 randomly synthesized degenerated oligodeoxyribonucleotides (oligos) were
 fused to the truncated g III (p230-P403). Sequence analysis of 11
 randomly
 chosen clones suggested that the degenerated inserts and its deduced
 amino
 acid (as) sequences are randomly distributed. The **library** was
 used to select binding peptides to the monoclonal antibody (mAb) 9E10,
 which recognizes a continuous decapeptide epitope of denatured human
 c-myc
 protein. After four to five rounds of panning, most of the eluted clones
 could bind to 9E10. Sequence analysis of the selected positive clones
 indicated that the binding sequences could fall into two classes, one
 class (clone 1) shares a consensus motif, ISE X X L, with c-myc
 decapeptide; and the sequences of the other class are entirely different.
 The binding of both classes to 9E10 could be specifically inhibited by
 free c-myc decapeptide. The immunogenicity of the phage peptide was
 further investigated by construction of **multivalent** displayed
phage peptides and immunization of animals with or without
 adjuvant. ELISA and competitive ELISA showed that anti-serum from both
 mice and rabbit immunized with either clone could bind to the original
 antigen, c-myc decapeptide. These results denote that in spite of the
 dissimilarity of the selected peptides with c-myc decapeptide they are
 capable of inducing similar immune response in vivo, thus actually
 mimicking the antigen epitope.
 CC Genetics and Cytogenetics - Animal *03506
 Biochemical Studies - General *10060
 Immunology and Immunochemistry - General; Methods *34502
 BC Leporidae 86040
 Muridae 86375
 IT Major Concepts
 Immune System (Chemical Coordination and Homeostasis); Molecular
 Genetics (Biochemistry and Molecular Biophysics)
 IT Chemicals & Biochemicals
 antigen epitope; c-myc decapeptide; monoclonal antibody 9E10
 IT Methods & Equipment
 monovalent **phage display**: analytical method
 IT Miscellaneous Descriptors
 amino acid sequences; immune responses; octapeptide **library**
 ORGN Super Taxa
 Leporidae: Lagomorpha, Mammalia, Vertebrata, Chordata, Animalia;
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
 ORGN Organism Name
 mouse (Muridae); rabbit (Leporidae)
 ORGN Organism Superterms
 Animals; Chordates; Lagomorphs; Mammals; Nonhuman Mammals; Nonhuman
 Vertebrates; Rodents; Vertebrates

 L7 ANSWER 7 OF 9 MEDLINE
 AN 96256889 MEDLINE
 DN 96256889

DUPLICATE 4

TI A **phage display** system for detection of T cell
 receptor-antigen interactions.
 AU Onda T; LaFace D; Baier G; Brunner T; Honma N; Mikayama T; Altman A;
 Green
 D R
 CS Division of Cellular Immunology, La Jolla Institute for Allergy and
 Immunology, CA 92037, USA.
 NC GM52735 (NIGMS)
 SO MOLECULAR IMMUNOLOGY, (1995 Dec) 32 (17-18) 1387-97.
 Journal code: NG1. ISSN: 0161-5890.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals
 EM 199609
 AB The process of T cell recognition involves a complex set of interactions
 between the various components of the TCR/MHC/peptide trimolecular
 complex. We have developed a system for exploring the specific binding
 interactions contributed by the constituent subunits of TCR complexes for
 components of their ligands. We utilized an M13 **phage**
display system, designed for multivalent receptor display, to
 explore specific binding interactions between various TCR alpha chains
 and
 specific antigen in the absence of MHC. The **multivalent** TCR-
phage display system was sensitive enough to reveal some
 TCR alpha chains capable of binding directly to antigen with the same
 fine
 specificity shown by the MHC-restricted T cells from which the alpha
 chains were derived. Cross-specificity analysis using two antigen-binding
 TCR alpha chains derived from T cells with different polypeptide antigen
 specificities confirmed the fidelity of this binding. In mixtures of
 antigen-binding and non-binding TCR alpha-displaying phage, specific
 selection was achieved at a starting frequency of 1/1000, suggesting that
 this system can be employed for selection and analysis of TCR-displaying
 phage **libraries**. While the binding specificities exhibited by
 these TCRs are unusual, they provide a novel perspective from which to
 study the specific binding interactions that constitute TCR antigen
 binding.
 CT Check Tags: Animal; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
 Amino Acid Sequence
 *Antigen Presentation: GE, genetics
 *Bacteriophage M13: GE, genetics
 Bacteriophage M13: IM, immunology
 Base Sequence
 Binding Sites: GE, genetics
 Binding Sites: IM, immunology
 Epitopes: GE, genetics
 *Genetic Vectors: IM, immunology
 Helper Viruses: GE, genetics
 Helper Viruses: IM, immunology
 Mice
 Mice, Inbred BALB C
 Molecular Sequence Data
 Peptides: GE, genetics
 Peptides: IM, immunology
 *Peptides: ME, metabolism
 Receptors, Antigen, T-Cell, alpha-beta: GE, genetics
 *Receptors, Antigen, T-Cell, alpha-beta: ME, metabolism
 T-Lymphocytes: IM, immunology
 CN 0 (Epitopes); 0 (Genetic Vectors); 0 (Peptides); 0 (Receptors, Antigen,
 T-Cell, alpha-beta)
 L7 ANSWER 8 OF 9 MEDLINE
 AN 92228829 MEDLINE
 DN 92228829

DUPLICATE 5

TI In vitro selection and affinity maturation of antibodies from a naive combinatorial immunoglobulin **library**.
 AU Gram H; Marconi L A; Barbas C F 3d; Collet T A; Lerner R A; Kang A S
 CS Scripps Research Institute, Department of Molecular Biology, La Jolla, CA 92037..
 SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (1992 Apr 15) 89 (8) 3576-80.
 Journal code: PV3. ISSN: 0027-8424.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals
 EM 199207
 AB We have used a combinatorial immunoglobulin **library** approach to obtain monoclonal antibodies from nonimmune adult mice, thereby establishing the principles of (i) accessing naive combinatorial antibody **libraries** for predetermined specificities and (ii) increasing the affinity of the selected antibody binding sites by random mutagenesis. A combinatorial Fab **library** expressing immunoglobulin mu and kappa light-chain fragments on the surface of filamentous phage was prepared from bone marrow of nonimmunized, adult BALB/c mice with the **multivalent** display vector pComb8. **Phage** displaying low affinity Fabs (binding constants, $10(4)$ - $10(5)$ M⁻¹) binding to a progesterone-bovine serum albumin conjugate were isolated from the **library**. Random mutagenesis of the heavy- and light-chain variable regions expressed in the mono-valent **phage display** vector pComb3 was performed by error-prone PCR, and subsequently clones with improved affinity for the hapten conjugate were selected. We demonstrate that antibodies with desirable characteristics from a nonimmune source may be selected and affinity maturation may be achieved by using the twin vectors pComb8 and pComb3, thus opening the route to obtaining specific antibodies from a generic **library** and bypassing immunization.
 CT Check Tags: Animal; Comparative Study; Male
 Amino Acid Sequence
 *Antibodies, Monoclonal: GE, genetics
 Base Sequence
 *Bone Marrow: IM, immunology
 Enzyme-Linked Immunosorbent Assay
 *Gene Library
 *Genes, Immunoglobulin
 *Immunoglobulin Variable Region: GE, genetics
 *Immunoglobulins, kappa-Chain: GE, genetics
 *Immunoglobulins, mu-Chain: GE, genetics
 *Immunoglobulins, Fab: GE, genetics
 Mice
 Mice, Inbred BALB C
 Molecular Sequence Data
 Mutagenesis
 Oligodeoxyribonucleotides
 Plasmids
 Polymerase Chain Reaction
 Restriction Mapping
 Sequence Homology, Nucleic Acid
 CN 0 (Antibodies, Monoclonal); 0 (Immunoglobulin Variable Region); 0 (Immunoglobulins, kappa-Chain); 0 (Immunoglobulins, mu-Chain); 0 (Immunoglobulins, Fab); 0 (Oligodeoxyribonucleotides); 0 (Plasmids)
 L7 ANSWER 9 OF 9 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1990:502702 BIOSIS
 DN BR39:114698
 TI ESTABLISHMENT OF THE GENE **LIBRARY** OF THE **POLYVALENT PHAGE** 812 AND THE **PHAGE** 80-ALPHA.
 AU ROSYPAL S; DOSKAR J; ROSYPALOVA A; ZUROVEC M
 CS DEP. GENERAL MOLECULAR BIOL., FAC. SCI., MASARYK UNIVERSITY, KOTLARSKA 2,

611 37 BRNO.
SO Scr. Fac. Sci. Nat. Univ. Purkynianae Brun., (1990) 20 (3), 151-152.
CODEN: SUPBAA. ISSN: 0371-4144.
FS BR; OLD
LA English
CC Biochemical Studies - Nucleic Acids, Purines and Pyrimidines 10062
Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Biophysics - General Biophysical Techniques 10504
Enzymes - Physiological Studies *10808
Physiology and Biochemistry of Bacteria *31000
Genetics of Bacteria and Viruses *31500
Virology - Bacteriophage *33504
BC Bacterial Viruses - Unspecified 02110
Enterobacteriaceae 04810
Micrococcaceae 05510
IT Miscellaneous Descriptors
STAPHYLOCOCCUS-AUREUS ESCHERICHIA-COLI DNA RESTRICTION ENDONUCLEASE
ELECTROPHORESIS
RN 9055-11-2 (ENDONUCLEASE)

L9 ANSWER 1 OF 5 MEDLINE
AN 1999144109 MEDLINE
DN 99144109
TI Targeted delivery of **multivalent phage display**
vectors into mammalian cells [published erratum appears in Biochim
Biophys
Acta 1999 Sep 21;1451(2-3):364].
AU Ivanenkov V V; Felici F; Menon A G
CS Department of Molecular Genetics, Biochemistry and Microbiology,
University of Cincinnati, College of Medicine 45267, USA.
SO BIOCHIMICA ET BIOPHYSICA ACTA, (1999 Jan 11) 1448 (3) 463-72.
Journal code: AOW. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Cancer Journals; Priority Journals
E

12 ANSWER 16 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1996:485065 BIOSIS
DN PREV199699200321
TI In vitro and in vivo characterization of a human anti-c-erbB-2
single-chain Fv isolated from a filamentous phage antibody **library**
.
AU Schier, Robert; **Marks, James D. (1)**; Wolf, Ellen J.; Apell,
Gerald; Wong, Cindy; McCartney, John E.; Bookman, Michael A.; Huston,
James S.; Houston, L. L.; Weiner, Louis M.; Adams, Gregory P.
CS (1) Dep. Anesthesia Pharm. Chem., Univ. California, San Francisco, CA USA
SO Immunotechnology (Amsterdam), (1995) Vol. 1, No. 1, pp. 73-81.
ISSN: 1380-2933.
DT Article
LA En

L12 ANSWER 1 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 2000:277648 BIOSIS
DN PREV200000277648
TI High affinity human antibodies to tumor antigens.
AU **Marks, James D. (1)**; Schier, Robert
CS (1) San Francisco, CA USA
ASSIGNEE: The Regents of the University of California, Oakland, CA, USA
PI US 5977322 November 02, 1999
SO Official Gazette of the United States Patent and Trademark Office
Patents,
(Nov. 2, 1999) Vol. 1228, No. 1, pp. No pagination. e-file..
ISSN: 0098-1133.
DT Patent
LA English

L12 ANSWER 2 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 2000:278867 BIOSIS
DN PREV200000278867
TI Methods for producing members of specific binding pairs.
AU McCafferty, John (1); Pope, Anthony Richard; Johnson, Kevin Stuart;
Hoogenboom, Henricus Renerus Jacobus Mattheus; Griffiths, Andrew David;
Jackson, Ronald Henry; Holliger, Kaspar Philipp; **Marks, James
David**; Clackson, Timothy Piers; Chiswell, David John; Winter, Gregory
Paul; Bonnert, Timothy Peter
CS (1) Sawston UK
ASSIGNEE: Medical Research Council; Cambridge Antibody Technology
Limited,
Cambridgeshire, UK
PI US 5969108 October 19, 1999
SO Official Gazette of the United States Patent and Trademark Office
Patents,
(Oct. 19, 1999) Vol. 1227, No. 3, pp. No pagination. e-file..
ISSN: 0098-1133.
DT Patent
LA English

L12 ANSWER 3 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1999:322259 BIOSIS
DN PREV199900322259
TI Disruption of anthrax toxin binding with the use of human antibodies and
competitive inhibitors.
AU Cirino, Nick M.; Sblattero, Daniele; Allen, David; Peterson, Scott R.;
Marks, James D.; Jackson, Paul J.; Bradbury, Andrew; Lehnert,
Bruce E. (1)
CS (1) Los Alamos National Laboratory, Los Alamos, NM, 87545 USA
SO Infection and Immunity, (June, 1999) Vol. 67, No. 6, pp. 2957-2963.
ISSN: 0019-9567.
DT Article
LA English
SL English

L12 ANSWER 4 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1999:343203 BIOSIS
DN PREV199900343203
TI Synthesis of Rh Fv phage-antibodies using VH and VL germline genes.
AU Hughes-Jones, Nevin C.; Bye, Jacqueline M.; Gorick, Barbara D.;
Marks, James D.; Ouwehand, Willem H. (1)
CS (1) Division of Transfusion Medicine, Department of Haematology,

University of Cambridge, Long Road, Cambridge, CB2 2PT UK
SO British Journal of Haematology, (June, 1999) Vol. 105, No. 3, pp.
811-816.

ISSN: 0007-1048.

DT Article
LA English
SL English

L12 ANSWER 5 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1999:145729 BIOSIS
DN PREV199900145729
TI Toward selection of internalizing antibodies from phage libraries

AU Becerril, Baltazar; Poul, Marie-Alix; Marks, James D. (1)
CS (1) Dep. Anesthesia, Univ. California, San Francisco, Room 3C-38, San
Francisco General Hosp., 1001 Potrero Ave., San Francisco, CA 94110 USA
SO Biochemical and Biophysical Research Communications, (Feb. 16, 1999) Vol.
255, No. 2, pp. 386-393.
ISSN: 0006-291X.
DT Article
LA English

L12 ANSWER 6 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1999:269322 BIOSIS
DN PREV199900269322
TI Targeted gene delivery to mammalian cells by filamentous bacteriophage.
AU Poul, Marie-Alix; Marks, James D. (1)
CS (1) Departments of Anesthesia and Pharmaceutical Chemistry, University of
California San Francisco, San Francisco General Hospital, 1001 Potrero
Avenue, Rm. 3C-38, San Francisco, CA, 94110 USA
SO Journal of Molecular Biology, (April 30, 1999) Vol. 288, No. 2, pp.
203-211.
ISSN: 0022-2836.
DT Article
LA English
SL English

L12 ANSWER 7 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1998:296326 BIOSIS
DN PREV199800296326
TI Efficient construction of a large nonimmune phage antibody library
: The production of high-affinity human single-chain antibodies to
protein
antigens.
AU Sheets, Michael D. (1); Amersdorfer, Peter; Finnern, Ricarda; Sargent,
Peter; Lindqvist, Ericka; Schier, Robert; Hemingsen, Grete; Wong, Cindy;
Gerhart, John C.; Marks, James D.
CS (1) Dep. Mol. Cell Biol., Univ. California, Berkeley, CA 94720 USA
SO Proceedings of the National Academy of Sciences of the United States of
America, (May 26, 1998) Vol. 95, No. 11, pp. 6157-6162.
ISSN: 0027-8424.
DT Article
LA English

L12 ANSWER 8 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:439366 BIOSIS
DN PREV199799738569
TI Molecular characterization of murine humoral immune response to botulinum
neurotoxin type A binding domain as assessed by using phage antibody
libraries.
AU Amersdorfer, Peter; Wong, Cindy; Chen, Steven; Smith, Theresa; Deshpande,
Sharad; Sheridan, Robert; Finnern, Ricarda; Marks, James D. (1)
CS (1) Univ. California San Francisco, San Francisco General Hosp., 1001
Potrero Ave., Room 3C-38, San Francisco, CA 94110 USA
SO Infection and Immunity, (1997) Vol. 65, No. 9, pp. 3743-3752.

ISSN: 0019-9567.
DT Article
LA English

L12 ANSWER 9 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1996:463001 BIOSIS
DN PREV199699185357
TI Phage **libraries**. A new route to clinically useful antibodies.
AU Marks, Cara; **Marks, James D. (1)**
CS (1) Dep. Anesthesia, Rm. 3C-38, San Francisco Gen. Hosp., San Francisco, CA 94110 USA
SO New England Journal of Medicine, (1996) Vol. 335, No. 10, pp. 730-733.
ISSN: 0028-4793.
DT Article
LA English

L12 ANSWER 10 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:20285 BIOSIS
DN PREV199799319488
TI Isolation of picomolar affinity anti-c-erbB-2 single-chain Fv by molecular evolution of the complementarity determining regions in the center of the antibody binding site.
AU Schier, Robert (1); McCall, Adrian; Adams, Gregory P.; Marshall, Keith W.; Merritt, Hanne; Yim, Michael; Crawford, Robert S.; Weiner, Louis M.; Marks, Cara; **Marks, James D.**
CS (1) Codon Genet. Systems, Nussdorfer Laende 11, 1190 Vienna Austria
SO Journal of Molecular Biology, (1996) Vol. 263, No. 4, pp. 551-567.
ISSN: 0022-2836.
DT Article
LA English

L12 ANSWER 11 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:139133 BIOSIS
DN PREV199799438336
TI Engineering antibodies for tumor targeting using **phage display**.
AU Schier, Robert (1); Adams, G.; Marshall, K.; McCall, A.; Weiner, L.; Bookman, M.; **Marks, James D.**
CS (1) Dep. Anesthesia., Univ. California, San Francisco, CA USA
SO Immunotechnology (Amsterdam), (1996) Vol. 2, No. 4, pp. 290-291.
Meeting Info.: 1996 Keystone Meeting on Exploring and Exploiting Antibody and Ig Superfamily Combining Sites Taos, New Mexico, USA February 22-28, 1996
ISSN: 1380-2933.
DT Conference; Abstract
LA English

L12 ANSWER 12 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:139109 BIOSIS
DN PREV199799438312
TI Isolation and characterization of human single chain Fv (scFv) against botulinum neurotoxin type A.
AU Amersdorfer, Peter (1); Wong, Cindy (1); Smith, Theresa; **Marks, James D. (1)**
CS (1) Dep. Anesthesia Pharm. Chem., Univ. California, San Francisco, CA 94110 USA
SO Immunotechnology (Amsterdam), (1996) Vol. 2, No. 4, pp. 283.
Meeting Info.: 1996 Keystone Meeting on Exploring and Exploiting Antibody and Ig Superfamily Combining Sites Taos, New Mexico, USA February 22-28, 1996
ISSN: 1380-2933.
DT Conference; Abstract
LA English

L12 ANSWER 13 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1996:187624 BIOSIS
 DN PREV199698743753
 TI Identification of functional and structural amino-acid residues by parsimonious mutagenesis.
 AU Schier, Robert; Balint, Robert F.; McCall, Adrian; Apell, Gerald; Larrick, James W.; **Marks, James D. (1)**
 CS (1) Dep. Anesthesia, Room 3C-38, San Francisco Gen. Hosp., 1001 Potrero, San Francisco, CA 94110 USA
 SO Gene (Amsterdam), (1996) Vol. 169, No. 2, pp. 147-155. ISSN: 0378-1119.
 DT Article
 LA English

L12 ANSWER 14 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1997:157307 BIOSIS
 DN PREV199799456510
 TI Efficient in vitro affinity maturation of phage antibodies using BIAcore guided selections.
 AU Schier, Robert; **Marks, James D. (1)**
 CS (1) Dep. Anesthesia, Room 3C-38, San Francisco Gen. Hosp., 1001 Potrero, San Francisco, CA 94110 USA
 SO Human Antibodies and Hybridomas, (1996) Vol. 7, No. 3, pp. 97-105. ISSN: 0956-960X.
 DT Article
 LA English

L12 ANSWER 15 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1996:110464 BIOSIS
 DN PREV199698682599
 TI Isolation of high-affinity monomeric human anti-c-erbB-2 single chain Fv using affinity-driven selection.
 AU Schier, Robert; Bye, Jacqueline; Apell, Gerald; McCall, Adrian; Adams, Gregory P.; Malmqvist, Magnus; Weiner, Louis M.; **Marks, James D. (1)**
 CS (1) Dep. Anesthesia Pharm. Chem., Univ. California, San Francisco, Rm 3C-38 San Francisco Gen. Hosp., 1001 Potrero, San Francisco, CA 94110 USA
 SO Journal of Molecular Biology, (1996) Vol. 255, No. 1, pp. 28-43. ISSN: 0022-2836.
 DT Article
 LA English

L12 ANSWER 16 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1996:485065 BIOSIS
 DN PREV199699200321
 TI In vitro and in vivo characterization of a human anti-c-erbB-2 single-chain Fv isolated from a filamentous phage antibody library
 AU Schier, Robert; **Marks, James D. (1)**; Wolf, Ellen J.; Apell, Gerald; Wong, Cindy; McCartney, John E.; Bookman, Michael A.; Huston, James S.; Houston, L. L.; Weiner, Louis M.; Adams, Gregory P.
 CS (1) Dep. Anesthesia Pharm. Chem., Univ. California, San Francisco, CA USA
 SO Immunotechnology (Amsterdam), (1995) Vol. 1, No. 1, pp. 73-81. ISSN: 1380-2933.
 DT Article
 LA English

L12 ANSWER 17 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1993:186444 BIOSIS
 DN PREV199395096894
 TI Human anti-self antibodies with high specificity from phage display libraries.
 AU Griffiths, Andrew D.; Malmqvist, Magnus; **Marks, James D.**; Bye,

Jacqueline M.; Embleton, M. J.; McCafferty, John; Baier, Michael;
 Holliger, K. Philipp; Gorick, Barbara D.; et al.
 CS Inq: G. Winter, MRC Centre Protein Eng., Unit, MRC Center, Hills Road,
 Cambridge CB2 2QH UK
 SO EMBO (European Molecular Biology Organization) Journal, (1993) Vol. 12,
 No. 2, pp. 725-734.
 ISSN: 0261-4189.
 DT Article
 LA English

L12 ANSWER 18 OF 18 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1993:28132 BIOSIS
 DN PREV199395016332
 TI The repertoire of human germline V-H sequences reveals about fifty groups
 of V-H segments with different hypervariable loops..
 AU Tomlinson, Ian M.; Walter, Gerald; Marks, James D.; Llewelyn,
 Meirion B.; Winter, Greg (1)
 CS (1) MRC Centre Protein Engineering, Hills Road, Cambridge CB2 2QH UK
 SO Journal of Molecular Biology, (1992) Vol. 227, No. 3, pp. 776-798.
 ISSN: 0022-2836.
 DT Article
 LA English

L9 ANSWER 1 OF 7 SCISEARCH COPYRIGHT 2000 ISI (R)
 AN 2000:470933 SCISEARCH
 GA The Genuine Article (R) Number: 326AT
 TI Selection of recombinant antibodies specific for pathogenic Streptococcus
 suis by subtractive phage display
 AU deGreeff A (Reprint); vanAlphen L; Smith H E
 CS INST ANIM SCI & HLTH, DEPT BACTERIOL, POB 65, NL-8200 AB LELYSTAD,
 NETHERLANDS (Reprint); UNIV AMSTERDAM, ACAD MED CTR, DEPT MED MICROBIOL,
 NL-1105 AZ AMSTERDAM, NETHERLANDS; NATL INST PUBL HLTH & ENVIRONM, RIVM,
 LAB VACCINE DEV & IMMUNE MECHANISMS, NL-3720 BA BILTHOVEN, NETHERLANDS
 CYA NETHERLANDS
 SO INFECTION AND IMMUNITY, (JUL 2000) Vol. 68, No. 7, pp. 3949-3955.
 Publisher: AMER SOC MICROBIOLOGY, 1752 N ST NW, WASHINGTON, DC
 20036-2904.
 ISSN: 0019-9567.
 DT Article; Journal
 FS LIFE
 LA English
 REC Reference Count: 30
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 2 OF 7 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1999:308541 BIOSIS
 DN PREV199900308541
 TI Identification of a human anti-CD55 single-chain Fv by subtractive
 panning
 of a phage library using tumor and nontumor cell lines.
 AU Ridgway, John B.B.; Ng, Eric; Kern, Jeffrey A.; Lee, James; Brush,
 Jennifer; Goddard, Audrey; Carter, Paul (1)
 CS (1) Genentech Inc., 1 DNA Way, South San Francisco, CA, 94080 USA
 SO Cancer Research, (June 1, 1999) Vol. 59, No. 11, pp. 2718-2723.
 ISSN: 0008-5472.
 DT Article
 LA English
 SL English

L9 ANSWER 3 OF 7 MEDLINE DUPLICATE 1
 AN 1999398409 MEDLINE
 DN 99398409
 TI Dissecting the human peripheral B-cell compartment with phage
 display-derived antibodies.
 AU van der Vuurst de Vries A; Logtenberg T
 CS Department of Immunology, University Hospital Utrecht, The Netherlands.
 SO IMMUNOLOGY, (1999 Sep) 98 (1) 55-62.
 Journal code: GH7. ISSN: 0019-2805.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals
 EM 200001
 EW 20000104

L9 ANSWER 4 OF 7 MEDLINE DUPLICATE 2
 AN 1999095686 MEDLINE
 DN 99095686
 TI A new **subtraction** technique for molecular cloning of rare
 antiviral **antibody** specificities from **phage** display
libraries.

AU Burioni R; Plaisant P; Bugli F; Solforosi L; Delli Carri V; Varaldo P E; Fadda G
CS Istituto di Microbiologia, Facolt'a di Medicina, Universit'a Cattolica
del
Sacro Cuore, Roma, Italy.
SO RESEARCH IN VIROLOGY, (1998 Sep-Oct) 149 (5) 327-30.
Journal code: R7E. ISSN: 0923-2516.
CY France
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199906
EW 19990603

L9 ANSWER 5 OF 7 MEDLINE
AN 97268669 MEDLINE
DN 97268669
TI Subtractive isolation of phage-displayed single-chain antibodies to
thymic
stromal cells by using intact thymic fragments.
AU Van Ewijk W; de Kruif J; Germeraad W T; Berendes P; Ropke C; Platenburg P
P; Logtenberg T
CS Department of Immunology, Erasmus University of Rotterdam, The
Netherlands.
SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF
AMERICA, (1997 Apr 15) 94 (8) 3903-8.
Journal code: PV3. ISSN: 0027-8424.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 199707
EW 19970704

L9 ANSWER 6 OF 7 SCISEARCH COPYRIGHT 2000 ISI (R)
AN 96:608087 SCISEARCH
GA The Genuine Article (R) Number: VB545
TI A MODEL PHAGE DISPLAY SUBTRACTION METHOD WITH POTENTIAL FOR ANALYSIS OF
DIFFERENTIAL GENE-EXPRESSION
AU STAUSBOLGRON B (Reprint); WIND T; KJAER S; KAHNS L; HANSEN N J V;
KRISTENSEN P; CLARK B F C
CS AARHUS UNIV, INST MOL & STRUCT BIOL, LANGE LANDSGADE 140, DK-8000 AARHUS
C,
DENMARK (Reprint); MARSELISBORG HOSP, DEPT DERMATOL, DK-8000 AARHUS C,
DENMARK
CYA DENMARK
SO FEBS LETTERS, (05 AUG 1996) Vol. 391, No. 1-2, pp. 71-75.
ISSN: 0014-5793.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 33
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 7 OF 7 MEDLINE
AN 95249587 MEDLINE
DN 95249587
TI Rapid selection of cell subpopulation-specific human monoclonal
antibodies
from a synthetic phage antibody library.
AU de Kruif J; Terstappen L; Boel E; Logtenberg T
CS Department of Immunology, Utrecht University, The Netherlands.
SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF
AMERICA, (1995 Apr 25) 92 (9) 3938-42.
Journal code: PV3. ISSN: 0027-8424.

CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 199508

L9 ANSWER 4 OF 7 MEDLINE
AN 1999095686 MEDLINE
DN 99095686
TI A new **subtraction** technique for molecular cloning of rare
antiviral **antibody** specificities from **phage** display
libraries.
AU Burioni R; Plaisant P; Bugli F; Solforosi L; Delli Carri V; Varaldo P E;
Fadda G
CS Istituto di Microbiologia, Facolt`a di Medicina, Universit`a Cattolica
del
Sacro Cuore, Roma, Italy.
SO RESEARCH IN VIROLOGY, (1998 Sep-Oct) 149 (5) 327-30.
Journal code: R7E. ISSN: 0923-2516.
CY France
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199906
EW 19990603
AB The preparation of random combinatorial libraries exposed on the surface
of phage provides a route for the selection of diverse high affinity
human
monoclonal antibodies. However, in particular settings, the isolation of
genes coding for a rare antibody can be elusive because some epitopes are
predominant and because, in the case of impure antigens, the protein or
any compound of interest can be present in relatively minimal amount. In
this paper, we describe the successful utilization of a new strategy of
"preadsorption" panning that allowed us to clone a rare human monoclonal
antibody fragment and to access a different antibody repertoire. The
procedure is easy, fast, inexpensive, can be used together with other
panning techniques and can be particularly useful in cloning antibodies
against rare or unknown determinants.
CT Check Tags: Human; Support, Non-U.S. Gov't
Antibodies, Monoclonal: GE, genetics
*Antibodies, Monoclonal: IM, immunology
*Antibody Specificity
Antigens, Viral: IM, immunology
Bacteriophages
Base Sequence
*Cloning, Molecular
Enzyme-Linked Immunosorbent Assay
Fluorescent Antibody Technique, Indirect
Herpes Simplex: VI, virology
*Herpesvirus 1, Human: IM, immunology
*Herpesvirus 2, Human: IM, immunology
Immunoglobulin Variable Region: GE, genetics
Immunoglobulins, Fab: GE, genetics
*Immunoglobulins, Fab: IM, immunology
Immunoglobulins, Heavy-Chain: GE, genetics
Immunoglobulins, Heavy-Chain: IM, immunology
Middle Age
Molecular Sequence Data
Peptide Library
CN 0 (Antibodies, Monoclonal); 0 (Antigens, Viral); 0 (Immunoglobulin
Variable Region); 0 (Immunoglobulins, Fab); 0 (Immunoglobulins,
Heavy-Chain); 0 (Peptide Library)

DUPLICATE 2

L9 ANSWER 2 OF 7 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1999:308541 BIOSIS
 DN PREV199900308541
 TI Identification of a human anti-CD55 single-chain Fv by subtractive
 panning
 of a phage library using tumor and nontumor cell lines.
 AU Ridgway, John B.B.; Ng, Eric; Kern, Jeffrey A.; Lee, James; Brush,
 Jennifer; Goddard, Audrey; Carter, Paul (1)
 CS (1) Genentech Inc., 1 DNA Way, South San Francisco, CA, 94080 USA
 SO Cancer Research, (June 1, 1999) Vol. 59, No. 11, pp. 2718-2723.
 ISSN: 0008-5472.
 DT Article
 LA English
 SL English
 AB A large naive human single-chain (sc) Fv phage library was used to search
 for tumor-associated antigens by panning with a lung adenocarcinoma cell
 line, 1264, and counter-selecting with a nontumor bronchial epithelial
 cell line, BEAS-2B. After three rounds of subtractive panning, 239 of 673
 clones analyzed bound selectively to 1264 tumor cells in a phage ELISA.
 Diversity analysis of these tumor-selective clones by BstNI
 finger-printing and nucleotide sequencing revealed 14 distinct scFv
 fragments. Four clones bound selectively to 1264 over BEAS-2B cells when
 analyzed by a more discriminating flow cytometric assay using scFv.
 Moreover, these clones showed only limited cross-reactivity to several
 primary human cell lines. One clone, LU30, also cross-reacted strongly
 with the lung adenocarcinoma line, A549. The LU30 antigen was identified
 as decay-accelerating factor (CD55) by expression cloning from a 1264
 cDNA
 library. The mean number of decay-accelerating factor molecules on the
 surface of 1264 and BEAS cells used for panning and counter-selection was
 estimated as 75,000 +/- 5,000 and 13,000 +/- 10,000, respectively. Thus,
 phage library panning combined with expression cloning permits
 identification of antibodies and their cognate antigens for proteins that
 are differentially expressed on the surface of distinct cell populations.
 CC Neoplasms and Neoplastic Agents - Immunology *24003
 Cytology and Cytochemistry - Human *02508
 Metabolism - Carbohydrates *13004
 Neoplasms and Neoplastic Agents - Neoplastic Cell Lines *24005
 Immunology and Immunochemistry - Immunopathology, Tissue Immunology
 *34508
 Metabolism - Proteins, Peptides and Amino Acids *13012
 Respiratory System - Pathology *16006
 Biochemical Methods - Proteins, Peptides and Amino Acids *10054
 Tissue Culture, Apparatus, Methods and Media *32500
 Virology - Bacteriophage *33504
 Genetics of Bacteria and Viruses *31500
 Biochemical Methods - Carbohydrates *10058
 Respiratory System - Physiology and Biochemistry *16004
 Biochemical Studies - Proteins, Peptides and Amino Acids *10064
 Biochemical Studies - Carbohydrates *10068
 Biophysics - Molecular Properties and Macromolecules *10506
 BC Hominidae 86215
 IT Major Concepts
 Molecular Genetics (Biochemistry and Molecular Biophysics); Tumor
 Biology
 IT Chemicals & Biochemicals
 anti-CD-55 decay-accelerating factor **antibody**:
 identification, single chain Fv **phage library**

subtractive panning, tumor cell expression
ORGN Super Taxa
 Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
 BEAS-2B cell line (Hominidae): human nontumor bronchial epithelial
cell
 line; 1264 cell line (Hominidae): human lung adenocarcinoma cell line
ORGN Organism Superterms
 Animals; Chordates; Humans; Mammals; Primates; Vertebrates
RN 99085-47-9 (DECAY-ACCELERATING FACTOR)

L20 ANSWER 6 OF 7 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1999:269322 BIOSIS
 DN PREV199900269322
 TI Targeted gene delivery to mammalian cells by filamentous bacteriophage.
 AU Poul, Marie-Alix; Marks, James D. (1)
 CS (1) Departments of Anesthesia and Pharmaceutical Chemistry, University of California San Francisco, San Francisco General Hospital, 1001 Potrero Avenue, Rm. 3C-38, San Francisco, CA, 94110 USA
 SO Journal of Molecular Biology, (April 30, 1999) Vol. 288, No. 2, pp. 203-211.
 ISSN: 0022-2836.
 DT Article
 LA English
 SL English
 AB We report that prokaryotic viruses can be re-engineered to infect eukaryotic cells resulting in expression of a reporter gene inserted into the bacteriophage genome. Phage capable of binding mammalian cells expressing the growth factor receptor ErbB2 and undergoing receptor-mediated endocytosis were isolated by selection of a **phage antibody library** on breast tumor cells and recovery of infectious phage from within the cell. As determined by immunofluorescence, F5 phage were efficiently endocytosed into 100% of ErbB2 expressing SKBR3 cells. To achieve reporter gene expression, F5 phage were engineered to package the green fluorescent protein (GFP) reporter gene driven by the CMV promoter. These phage when applied to cells underwent ErbB2-mediated endocytosis leading to GFP expression. GFP expression occurred only in cells overexpressing ErbB2, was dose-dependent reaching, 4% of cells after 60 hours and was detected with phage titers as low as 2.0×10^7 cfu/ml (500 phage/cell). The results demonstrate that bacterial viruses displaying the appropriate antibody can bind to mammalian receptors and utilize the endocytic pathway to infect eukaryotic cells, resulting in expression of a reporter gene inserted into the viral genome. This represents a novel method to discover targeting molecules capable of delivering a gene intracellularly into the correct trafficking pathway for gene expression by directly screening phage antibodies. This should significantly facilitate the identification of appropriate targets and targeting molecules for gene therapy or other applications where delivery into the cytosol is required. This approach can be adapted to directly select, rather than screen, phage antibodies for targeted gene expression. The results also demonstrate the potential of phage antibodies as an in vitro or in vivo targeted gene delivery vehicle.
 CC Genetics and Cytogenetics - Human *03508
 Microscopy Techniques - General and Special Techniques *01052
 Genetics of Bacteria and Viruses *31500
 Cytology and Cytochemistry - Human *02508
 BC Herpesviridae 02612
 Bacterial Viruses - General 02700
 Hominidae 86215
 IT Major Concepts
 Cell Biology; Methods and Techniques; Molecular Genetics (Biochemistry and Molecular Biophysics)
 IT Chemicals & Biochemicals
 ErbB2
 IT Methods & Equipment

cell culture: cell culture method, cell culture techniques;
immunofluorescence: Detection/Labeling Techniques, detection method;
transfection: gene expression/vector techniques, genetic method; FACS
[fluorescence-activated cell sorting]: cell isolation method, flow
cytometry: CT; Zeiss Axioskop fluorescent microscope: equipment

ORGN Super Taxa

Bacterial Viruses: Viruses, Microorganisms; Herpesviridae: Animal
Viruses, Viruses, Microorganisms; Hominidae: Primates, Mammalia,
Vertebrata, Chordata, Animalia

ORGN Organism Name

bacteriophage F5 (Bacterial Viruses); CMV [cytomegalovirus]
(Herpesviridae); MCF7 cell line (Hominidae); SKBR3 cell line
(Hominidae)

ORGN Organism Superterms

Animal Viruses; Animals; Bacterial Viruses; Chordates; Humans;
Mammals;
Microorganisms; Primates; Vertebrates; Viruses

L20 ANSWER 3 OF 7 SCISEARCH COPYRIGHT 2000 ISI (R)
AN 1999:964721 SCISEARCH
GA The Genuine Article (R) Number: 260JL
TI Targeting of breast tumors with scFv **antibodies** selected for
internalization from a **phage display library**.
AU Nielsen U B (Reprint); **Poul M A**; Pickering E M; Kirpotin D;
Shalaby R; Hong K; Park J W; Papahadjopoulos D; Benz C C; Marks J D
CS GARDEN STATE CANC CTR, BELLEVILLE, NJ
CYA USA
SO CLINICAL CANCER RESEARCH, (NOV 1999) Vol. 5, Supp. [S], pp. 92-92.
Publisher: AMER ASSOC CANCER RESEARCH, PO BOX 11806, BIRMINGHAM, AL
35202.
ISSN: 1078-0432.
DT Conference; Journal
FS CLIN
LA English
REC Reference Count: 0
C